# *Journal of Insect Biochemistry and Molecular Biology*

VOLUME CONTENTS AND AUTHOR INDEX

VOLUME 29, 1999

PERGAMON

# INSECT BIOCHEMISTRY AND MOLECULAR BIOLOGY


## EXECUTIVE EDITOR

L. I. GILBERT

William Rand Kenan Professor of Biology, CB No. 3280, Coker Hall, University of North Carolina, Chapel Hill, NC 27599-3280, U.S.A.

## RAPID COMMUNICATION EDITOR

A. S. RAIKHEL

Michigan State University, Department of Entomology, S-136 Plant Biology Building, East Lansing, MI 48824, U.S.A.

## EDITORIAL BOARD

S. O. ANDERSEN (*University of Copenhagen, Denmark*)
S. APPLEBAUM (*Hebrew University of Jerusalem, Israel*)
M. ASHIDA (*Hokkaido University, Sapporo, Japan*)
P. ATKINSON (*University of California, Riverside, Calif., U.S.A.*)
X. BELLES (*Centre de Investigacion y Desarollo, Barcelona, Spain*)
G. BLOMQUIST (*University of Nevada, Reno, Nev., U.S.A.*)
H. BREER (*University of Hohenheim, Germany*)
D. J. CANDY (*University of Birmingham, England*)
L. CHERBAS (*Indiana University, Bloomington, Ind., U.S.A.*)
F. ENGELMANN (*University of California, Los Angeles, Calif., U.S.A*)
P. D. EVANS (*University of Cambridge, England*)
A. M. FALLON (*University of Minnesota, Min., U.S.A.*)
R. FFRENCH-CONSTANT (*University of Bath, England*)
S. S. GILL (*University of California, Riverside, Calif., U.S.A.*)
R. H. GOODING (*University of Alberta, Edmonton, Alberta, Canada*)
W. GOODMAN (*University of Wisconsin, Madison, Wis., U.S.A.*)
J. HOFFMAN (*Université Louis Pasteur, France*)
D. HULTMARK (*Stockholm University, Sweden*)
K. IATROU (*University of Calgary, Calgary, Alberta, Canada*)
G. JONES (*University of Kentucky, Lexington, Ky, U.S.A.*)
L. KEELEY (*Texas A & M University, College Station, Tex., U.S.A.*)
L. E. KELLY (*University of Melbourne, Parkville, Victoria, Australia*)
K. KRAMER (*U.S. Grain Marketing Research Lab., Manhattan, Kan., U.S.A.*)
J. A. LEPESANT (*Université Paris VII, Paris, France*)
D. E. MULLINS (*Virginia Polytechnic Institute and State University, Blacksburg, Va, U.S.A.*)
S. NATORI (*University of Tokyo, Bunkyo-ku, Japan*)
H. REES (*University of Liverpool, England*)
L. M. RIDDIFORD (*University of Washington, Seattle, Wash., U.S.A.*)
H. ROBERTSON (*University of Illinois at Urbana-Champaign, Urbana, U.S.A.*)
W. ROELOFS (*New York State Agriculture Experiment Station, Geneva, N.Y., U.S.A.*)
R. RYAN (*University of Alberta, Edmonton, Alberta, Canada*)
S. SAKURAI (*Kanazawa University, Kanazawa, Japan*)
D. SCHOOLEY (*University of Nevada, Reno, Nev., U.S.A.*)
W. R. TERRA (*Universidade de São Paulo, São Paulo, Brazil*)
M. A. WELLS (*University of Arizona, Tuscon, Ariz., U.S.A.*)
J. H. WILLIS (*University of Georgia, Athens, Ga, U.S.A.*)
O. YAMASHITA (*Nagoya University, Nagoya, Aichi, Japan*)



**Publication information**: *Insect Biochemistry and Molecular Biology* (ISSN 0965-1748). For 2000, volume 30 is scheduled for publication. Subscription prices are available upon request from the Publisher or from the Regional Sales Office nearest you or from this journal's website (http://www.elsevier.nl/locate/ibmb or http://www.elsevier.nl/locate/ibmbjip). Further information is available on this journal and other Elsevier Science products through Elsevier's website: (http://www.elsevier.nl). Subscriptions are accepted on a prepaid basis only and are entered on a calendar year basis. Issues are sent by standard mail (surface within Europe, air delivery outside Europe). Priority rates are available upon request. Claims for missing issues should be made within six months of the date of dispatch.

**Author Service Department**: For queries relating to the general submission of articles (including electronic text and artwork) and the status of accepted manuscripts, please contact the Author Service Department: e-mail: authors@elsevier.co.uk; Fax: +44 (0)1865 843905; Tel.: +44 (0)1865 843900.

**Advertising information.** Advertising orders and enquiries can be sent to: **Europe and ROW**: Rachel Gresle-Farthing, Elsevier Science Ltd, Advertising Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843565; fax: (+44) (1865) 843976; e-mail: r.gresle-farthing@elsevier.co.uk. **USA and Canada**: Elsevier Science Inc., Mr Tino DeCarlo, 655 Avenue of the Americas, New York, NY 10010-5107, USA; phone: (+1) (212) 633 3815; fax: (+1) (212) 633 3820; e-mail: t.decarlo@elsevier.com. **Japan**: Elsevier Science K.K., Advertising Department, 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5033; fax: (+81) (3) 5561 5047.

**Orders, claims, and product enquiries:** please contact the Customer Support Department at the Regional Sales Office nearest you:

**New York:** Elsevier Science, PO Box 945, New York, NY 10159-0945, USA; phone: (+1) (212) 633 3730 [toll free number for North American customers: 1-888-4ES-INFO (437-4636)]; fax: (+1) (212) 633 3680; e-mail: usinfo-f@elsevier.com

**Amsterdam:** Elsevier Science, PO Box 211, 1000 AE Amsterdam, The Netherlands; phone: (+31) 20 4853757; fax: (+31) 20 4853432; e-mail: nlinfo-f@elsevier.nl

**Tokyo:** Elsevier Science, 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5033; fax: (+81) (3) 5561 5047; e-mail: info@elsevier-.co.jp

**Singapore:** Elsevier Science, No. 1 Temasek Avenue, #17-01 Millenia Tower, Singapore 039192; phone: (+65) 434 3727; fax: (+65) 337 2230; e-mail: asiainfo@elsevier.com.sg

**Rio de Janeiro:** Elsevier Science, Rua Sete de Setembro 111/16 Andar, 20050–002 Centro, Rio de Janeiro - RJ, Brazil; phone: (+55) (21) 509 5340; fax: (+55) (21) 507 1991; e-mail: elsevier@campus.com.br [Note (Latin America): for orders, claims and help desk information, please contact the Regional Sales Office in New York as listed above]

♾ The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper)

For orders, claims, product enquiries (no manuscript enquiries) please contact the Customer Support Department at the Regional Sales Office nearest to you.

Periodicals postage is paid at Rahway, NJ. *Insect Biochemistry and Molecular Biology* (ISSN 0965-1748) is published 12 issues per year, monthly, by Elsevier Science Ltd., The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. The US subscription price is $1572.00 per year.
**POSTMASTER**: Send address corrections to: *Insect Biochemistry and Molecular Biology*, Elsevier Science, Customer Support Department, PO Box 945, New York, NY 10159-0945.
**Distributed** in the USA by Mercury Airfreight International, 365 Blair Road, Avenel, NJ 07001.

Pergamon

Insect Biochemistry and Molecular Biology 29 (1999) 1149–1154

*Insect Biochemistry and Molecular Biology*

www.elsevier.com/locate/ibmb

# LIST OF CONTENTS

## VOLUME 29

### NUMBER 1


| | | |
|---|---|---|
| **Tien-sheng Huang, Öjar Melefors, Maria I. Lind, Kenneth Söderhäll** | 1 | An atypical Iron-Responsive Element (IRE) within crayfish ferritin mRNA and an Iron Regulatory Protein 1 (IRP1)-like protein from crayfish hepatopancreas |
| **D.S. King, J. Meredith, Y.J. Wang, J.E. Phillips** | 11 | Biological actions of synthetic locust ion transport peptide (ITP) |
| **Masao Iketani, Hitomi Nishimura, Koichi Akayama, Yoshiaki Yamano, Isao Morishima** | 19 | Minimum structure of peptidoglycan required for induction of antibacterial protein synthesis in the silkworm, *Bombyx mori* |
| **Alasdair J. Nisbet, Peter F. Billingsley** | 25 | Hydrolytic enzymes of *Psoroptes cuniculi* (Delafond) |
| **Helen Mao, W. Reuben Kaufman** | 33 | Profile of the ecdysteroid hormone and its receptor in the salivary gland of the adult female tick, *Amblyomma hebraeum* |
| **M.J. Palmer, J.L. McSwain, M.D. Spatz, J.S. Tucker, R.C. Essenberg, J.R. Sauer** | 43 | Molecular cloning of cAMP-dependent protein kinase catalytic subunit isoforms from the lone star tick, *Amblyomma americanum* (L.) |
| **Zhong Hui Wang, Ann M. Fallon** | 53 | Early-replicating DNA from mosquito cells is associated with a distinct *Eco*RI fragment |
| **Takashi Miyamoto, Masanobu Yamamoto, Akihiko Ono, Kazuya Ohtani, Tetsu Ando** | 63 | Substrate specificity of the epoxidation reaction in sex pheromone biosynthesis of the Japanese giant looper (Lepidoptera: Geometridae) |
| **Bastien Nay, Didier Fournier, Alain Baudras, Bernadette Baudras** | 71 | Mechanism of an insect glutathione *S*-transferase: kinetic analysis supporting a rapid equilibrium random sequential mechanism with housefly I1 isoform |
| **Erratum** | 81 | |
| **Forthcoming papers** | 83 | |
| **Contents of *Journal of Insect Physiology*** | 85 | |


### NUMBER 2


| | | |
|---|---|---|
| **Ross L. Tellam, Gene Wijffels, Peter Willadsen** | 87 | Peritrophic matrix proteins |
| **Sylvaine Renault, Florence Rouleux-Bonnin, Georges Periquet, Yves Bigot** | 103 | Satellite DNA transcription in *Diadromus pulchellus* (Hymenoptera) |
| **Gregory R. Wolfe, Clyde A. Smith, Donald L. Hendrix, Michael E. Salvucci** | 113 | Molecular basis for thermoprotection in *Bemisia*: structural differences between whitefly ketose reductase and other medium-chain dehydrogenases/reductases |
| **Masanobu Itoh, Yasushi Kanamori, Masao Takao, Masaharu Eguchi** | 121 | Cloning of soluble alkaline phosphatase cDNA and molecular basis of the polymorphic nature in alkaline phosphatase isozymes of *Bombyx mori* midgut |
| **Michel Bonadé-Bottino, Jacques Lerin, Bruno Zaccomer, Lise Jouanin** | 131 | Physiological adaptation explains the insensitivity of *Baris coerulescens* to transgenic oilseed rape expressing oryzacystatin I |
| **R. Predel, R. Kellner, R.J. Nachman, G.M. Holman, J. Rapus, G. Gäde** | 139 | Differential distribution of pyrokinin-isoforms in cerebral and abdominal neurohemal organs of the American cockroach |
| **Charani Ranasinghe, Andrew A. Hobbs** | 145 | Isolation and characterisation of a cytochrome b5 cDNA clone from *Helicoverpa armigera* (Hubner): possible involvement of cytochrome b5 in cytochrome P450 CYP6B7 activity towards pyrethroids |
| **Stephen L. Dobson, Kostas Bourtzis, Henk** | 153 | *Wolbachia* infections are distributed throughout insect somatic and germ |


0965-1748/99/$ - see front matter © 1999 Elsevier Science Ltd. All rights reserved.

| | | |
|---|---|---|
| **R. Braig, Brian F. Jones, Weiguo Zhou, François Rousset, Scott L. O'Neill** | | line tissues |
| **Sanjive Qazi, Barry A. Trimmer** | 161 | The role of inositol 1,4,5-trisphosphate 5-phosphatase in inositol signaling in the CNS of larval *Manduca sexta* |
| **Concepción Novillo, Pedro Castañera, Félix Ortego** | 177 | Isolation and characterization of two digestive trypsin-like proteinases from larvae of the stalk corn borer, *Sesamia nonagrioides* |
| **Si Hyeock Lee, Timothy J. Smith, Douglas C. Knipple, David M. Soderlund** | 185 | Mutations in the house fly *Vssc1* sodium channel gene associated with *super-kdr* resistance abolish the pyrethroid sensitivity of Vssc1/tipE sodium channels expressed in *Xenopus* oocytes |
| **Publisher's Notes** | 195 | |
| **Forthcoming papers** | 197 | |
| **Contents of *Journal of Insect Physiology*** | 199 | |


NUMBER 3


| | | |
|---|---|---|
| **Nitalie Islam, Raymond Bacala, Albert Moore, Désirée Vanderwel** | 201 | Biosynthesis of 4-methyl-1-nonanol: Female-produced sex pheromone of the yellow mealworm beetle, *Tenebrio molitor* (Coleoptera: Tenebrionidae) |
| **Zhicheng Shen, Glenn Manning, John C. Reese, Gerald R. Reeck** | 209 | Pectin methylesterase from the rice weevil, *Sitophilus oryzae* (L.) (Coleoptera: Curculionidae): Purification and characterization |
| **Eliane Fialho, Hatisaburo Masuda, Mário A.C. Silva-Neto** | 215 | Protein phosphorylation during *Rhodnius prolixus* embryogenesis: protein kinase casein kinase II activity |
| **Aleš Svatoš, Blanka Kalinová, Wilhelm Boland** | 225 | Stereochemistry of lepidopteran sex pheromone biosynthesis: a comparison of fatty acid-CoA Δ11-(Z)-desaturases in Bombyx mori and *Manduca sexta* female moths |
| **Marat B. Murataliev, Adrienne Ariño, Victor M. Guzov, René Feyereisen** | 233 | Kinetic mechanism of cytochrome P450 reductase from the house fly (*Musca domestica*) |
| **Fernando G. Noriega, Ann E. Colonna, Michael A. Wells** | 243 | Increase in the size of the amino acid pool is sufficient to activate translation of early trypsin mRNA in *Aedes aegypti* midgut |
| **S. Troy Whitworth, Tomasz Kordula, James Travis** | 249 | Molecular cloning of Soli E2: an elastase-like serine proteinase from the imported red fire ant (*Solenopsis invicta*) |
| **Jürgen Krieger, Jürgen Strobel, Alexander Vogl, Wolfgang Hanke, Heinz Breer** | 255 | Identification of a cyclic nucleotide and voltage-activated ion channel from insect antennae |
| **Kazunori Tanaka, Satoshi Inoue, Shigeki Mizuno** | 269 | Hydrophobic interaction of P25, containing Asn-linked oligosaccharide chains, with the H-L complex of silk fibroin produced by *Bombyx mori* |
| **Christopher S. Willett, Richard G. Harrison** | 277 | Pheromone binding proteins in the European and Asian corn borers: no protein change associated with pheromone differences |
| **Vassiliki A. Iconomidou, Judith H. Willis, Stavros J. Hamodrakas** | 285 | Is β-pleated sheet the molecular conformation which dictates formation of helicoidal cuticle? |
| **John Rebers** | 293 | Overlapping antiparallel transcripts induced by ecdysone in a *Drosophila* cell line |
| **Erratum** | 303 | |
| **Publisher's Notes** | 305 | |
| **Forthcoming Papers** | 307 | |
| **Contents of *Journal of Insect Physiology*** | 309 | |


NUMBER 4


| | | |
|---|---|---|
| **Pilar Ruiz-Vázquez, Francisco J. Silva** | 311 | Aberrant splicing of the *Drosophila melanogaster* phenylalanine hydroxylase pre-mRNA caused by the insertion of a *B104/roo* transposable element in the *Henna* locus |
| **Mary K. Barry, Aleata A. Triplett, Alan C. Christensen** | 319 | A peritrophin-like protein expressed in the embryonic tracheae of *Drosophila melanogaster* |
| **Jianyong Li, Brenda T. Beerntsen, Anthony A. James** | 329 | Oxidation of 3-hydroxykynurenine to produce xanthommatin for eye pigmentation: a major branch pathway of tryptophan catabolism during |

pupal development in the Yellow Fever Mosquito, Aedes aegypti

**Masataka G. Suzuki, Tomoko Terada, Masahiko Kobayashi, Toru Shimada** 339 Diapause-associated transcription of *BmEts*, a gene encoding an ETS transcription factor homolog in *Bombyx mori*

**Marie-Laure Ruhf, Marie Meister** 349 The *Drosophila* homologue of ribosomal protein L8

**Carlos P. Silva, Walter R. Terra, José Xavier-Filho, Maria F. Grossi de Sá, Adriana R. Lopes, Emerson G. Pontes** 355 Digestion in larvae of *Callosobruchus maculatus* and *Zabrotes subfasciatus* (Coleoptera: Bruchidae) with emphasis on α-amylases and oligosaccharidases

**Magdalena Hodková, Petr Šimek, Helena Zahradníčková, Olga Nováková** 367 Seasonal changes in the phospholipid composition in thoracic muscles of a heteropteran, *Pyrrhocoris apterus*

**Andrea L. Crampton, Glenn D. Baxter, Stephen C. Barker** 377 Identification and characterisation of a cytochrome P450 gene and processed pseudogene from an arachnid: the cattle tick, *Boophilus microplus*

**Catherine Rufingier, Nicole Pastuer, Jacques Lagnel, Christian Martin, Maria Navajas** 385 Mechanisms of insecticide resistance in the aphid *Nasonovia ribisnigri* (Mosley) (Homoptera: Aphididae) from France

**Forthcoming Papers** 393

**Contents of *Journal of Insect Physiology*** 395

## NUMBER 5

**R.H. ffrench-Constant** 397 Target site mediated insecticide resistance: what questions remain?

**Algimantas P. Valaitis, Sylvie Augustin, Karen M. Clancy** 405 Purification and characterization of the western spruce budworm larval midgut proteinases and comparison of gut activities of laboratory-reared and field-collected insects

**Yu-Cheng Zhu, Alan K. Dowdy, James E. Baker** 417 Differential mRNA expression levels and gene sequences of a putative carboxylesterase-like enzyme from two strains of the parasitoid *Anisopteromalus calandrae* (Hymenoptera: Pteromalidae)

**Štefan Albert, Jaroslav Klaudiny, Jozef Šimúth** 427 Molecular characterization of MRJP3, highly polymorphic protein of honeybee (*Apis mellifera*) royal jelly

**Weitian Liu, Peter W.K. Ma, Patricia Marsella-Herrick, Claire-Lise Rosenfield, Douglas C. Knipple, Wendell Roelofs** 435 Cloning and functional expression of a cDNA encoding a metabolic acyl-CoA Δ9-desaturase of the cabbage looper moth, *Trichoplusia ni*

**N.E. Gruntenko, T.M. Khlebodarova, M.Jh. Sukhanova, I.A. Vasenkova, L.Z. Kaidanov, I.Yu. Rauschenbach** 445 Prolonged negative selection of *Drosophila* melanogaster for a character of adaptive significance disturbs stress reactivity

**Markus Beck, Gitta Siekmann, Dongmei Li, Ulrich Theopold, Otto Schmidt** 453 A maternal gene mutation correlates with an ovary phenotype in a parthenogenetic wasp population

**Glenn D. Baxter, Stephen C. Barker** 461 Isolation of a cDNA for an octopamine-like, G-protein coupled receptor from the cattle tick, *Boophilus microplus*

**Book review** 469

**Forthcoming Papers** 471

**Contents of *Journal of Insect Physiology*** 473

## NUMBER 6

**Bernard Mauchamp, Eric Darrouzet, Christian Malosse, Franck Couillaud** 475 4′-OH-JH-III: an additional hydroxylated juvenile hormone produced by locust corpora allata in vitro

**Julie A. Tillman, Steven J. Seybold, Russell A. Jurenka, Gary J. Blomquist** 481 Insect pheromones—an overview of biosynthesis and endocrine regulation

**Catherine Barreau, John Conrad, Elizabeth Fischer, Hugo D. Lujan, Kenneth D. Vernick** 515 Identification of surface molecules on salivary glands of the mosquito, *Aedes aegypti*, by a panel of monoclonal antibodies

**Karen J. Garner, Shiv Hiremath, Kirsten Lehtoma, Algimantas P. Valaitis** 527 Cloning and complete sequence characterization of two gypsy moth aminopeptidase-N cDNAs, including the receptor for *Bacillus thuringiensis* Cry1Ac toxin

**Babiker M.A. A/Banat, Yuko Kameyama, Takanori Yoshioka, Daizo Koga** 537 Purification and characterization of a 54 kDa chitinase from *Bombyx mori*

**Cécile Girard, Lise Jouanin** 549 Molecular cloning of a gut-specific chitinase cDNA from the beetle *Phaedon cochleariae*

**Elaine H. Richards, John P. Edwards** 557 Parasitism of *Lacanobia oleracea* (Lepidoptera, noctuidae) by the ectoparasitic wasp *Eulophus pennicornis*, results in the appearance of a 27 kDa parasitism-specific protein in host plasma

**James T. Warren, Ji-da Dai, Lawrence I. Gilbert** 571 Can the insect nervous system synthesize ecdysteroids?

**Forthcoming Papers** 581

**Contents of *Journal of Insect Physiology*** 583

## NUMBER 7

**Xiao-Qiang Yu, Hong Gan, Michael R. Kanost** 585 Immulectin, an inducible C-type lectin from an insect, *Manduca sexta*, stimulates activation of plasma prophenol oxidase

**James L. Kerwin, Deborah L. Whitney, Amir Sheikh** 599 Mass spectrometric profiling of glucosamine, glucosamine polymers and their catecholamine adducts. Model reactions and cuticular hydrolysates of *Toxorhynchites amboinensis* (Culicidae) pupae

**Xiujuan Gao, Heather McLean, Stan Caveney, Cam Donly** 609 Molecular cloning and functional characterization of a GABA transporter from the CNS of the cabbage looper, *Trichoplusia ni*

**Shuji Itakura, Hiromi Tanaka, Akio Enoki** 625 Occurrence and metabolic role of the pyruvate dehydrogenase complex in the lower termite *Coptotermes formosanus* (Shiraki)

**Yongliang Fan, Ada Rafaeli, Carina Gileadi, Shalom W. Applebaum** 635 Juvenile hormone induction of pheromone gland PBAN-responsiveness in *Helicoverpa armigera* females

**S.E. Brown, S.H. Wood, D.L. Knudson** 643 Vertebrate exon trapping methods: implications for transcript mapping with mosquito DNA

**Winnie Lam, Geoffrey M. Coast, Richard C. Rayne** 653 Isolation and characterisation of two chymotrypsins from the midgut of *Locusta migratoria*

**Forthcoming Papers** 663

**Contents of *Journal of Insect Physiology*** 665

## NUMBER 8

**Kuang-Hui Lu, James Y. Bradfield, Larry L. Keeley** 667 Juvenile hormone inhibition of gene expression for cytochrome P4504C1 in adult females of the cockroach, *Blaberus discoidalis*

**Charles Claudianos, Robyn J. Russell, John G. Oakeshott** 675 The same amino acid substitution in orthologous esterases confers organophosphate resistance on the house fly and a blowfly

**Lutz Auerswald, Gerd Gäde** 687 The fate of proline in the African fruit beetle *Pachnoda sinuata*

**Kyoung Sang Cho, Jeom Hee Lim, Dong Hwan Won, Myung Chan Gye, Ki Wha Chung, Chung Choo Lee** 701 A 45-kDa cAMP-dependent phosphoprotein which is related to the product of *Mst57Dc* in *Drosophila melanogaster*

**Maria Helena Silva-Filha, Christina Nielsen-LeRoux, Jean-François Charles** 711 Identification of the receptor for *Bacillus sphaericus* crystal toxin in the brush border membrane of the mosquito *Culex pipiens* (Diptera: Culicidae)

**Skarlatos G. Dedos, Hajime Fugo** 723 Downregulation of the cAMP signal transduction cascade in the prothoracic glands is responsible for the fenoxycarb-mediated induction of permanent 5th instar larvae in *Bombyx mori*

**Takahiro Shiotsuki, Yusuke Kato** 731 Induction of carboxylesterase isozymes in *Bombyx mori* by *E. coli* infection

**Haiqi He, Andrew C. Chen, Ronald B. Davey, G. Wayne Ivie, John E. George** 737 Characterization and molecular cloning of a glutathione *S*-transferase gene from the tick, *Boophilus microplus* (Acari: Ixodidae)

**Forthcoming Papers** 745

**Contents of *Journal of Insect Physiology*** 747

## NUMBER 9


| | | |
|---|---|---|
| **Xianzong Shi, Sheilachu P. Gomez, Pauline O. Lawrence** | 749 | A 24 kDa parasitism-specific protein from the Caribbean fruit fly, *Anastrepha suspensa*: cDNA and deduced amino acid sequence |
| **Jeffrey G. Scott** | 757 | Cytochromes P450 and insecticide resistance |
| **Q.-L. Feng, K.G. Davey, A.S.D. Pang, M. Primavera, T.R. Ladd, S.-C. Zheng, S.S. Sohi, A. Retnakaran, S.R. Palli** | 779 | Glutathione S-transferase from the spruce budworm, *Choristoneura fumiferana*: identification, characterization, localization, cDNA cloning, and expression |
| **C. Phalaraksh, E.M. Lenz, J.C. Lindon, J.K. Nicholson, R.D. Farrant, S.E. Reynolds, I.D. Wilson, D. Osborn, J.M. Weeks** | 795 | NMR spectroscopic studies on the haemolymph of the tobacco hornworm, *Manduca sexta*: assignment of $^{1}H$ and $^{13}C$ NMR spectra |
| **Plínio T. Cristofoletti, Walter R. Terra** | 807 | Specificity, anchoring, and subsites in the active center of a microvillar aminopeptidase purified from *Tenebrio molitor* (Coleoptera) midgut cells |
| **D. Comas, M.D. Piulachs, X. Bellés** | 821 | Fast induction of vitellogenin gene expression by juvenile hormone III in the cockroach *Blattella germanica* (L.) (Dictyoptera, Blattellidae) |
| **Andrea L. Crampton, Glenn D. Baxter, Stephen C. Barker** | 829 | A new family of cytochrome P450 genes (*CYP41*) from the cattle tick, *Boophilus microplus* |
| **Frédéric Morel, Roger Debise, Monique Renoux, Sylvie Touraille, Michel Ragno, Serge Alziari** | 835 | Biochemical and molecular consequences of ethidium bromide treatment on Drosophila cells |
| **Forthcoming Papers** | 845 | |
| **Contents of *Journal of Insect Physiology*** | 847 | |


## NUMBER 10


| | | |
|---|---|---|
| **Eliahu Zlotkin, Alan L. Devonshire, Jeffrey W. Warmke** | 849 | The pharmacological flexibility of the insect voltage gated sodium channel: toxicity of AaIT to knockdown resistant (kdr) flies |
| **Michael A. Riehle, Mark R. Brown** | 855 | Insulin stimulates ecdysteroid production through a conserved signaling cascade in the mosquito *Aedes aegypti* |
| **B. Kostron, D. Market, J. Kellermann, C.E. Carter, H.-W. Honegger** | 861 | Antisera against *Periplaneta americana* Cu,Zn-superoxide dismutase (SOD): separation of the neurohormone bursicon from SOD, and immunodetection of SOD in the central nervous system |
| **W.O.C. Symondson, M.L. Erickson, J.E. Liddell, K.G.I. Jayawardena** | 873 | Amplified detection, using a monoclonal antibody, of an aphid-specific epitope exposed during digestion in the gut of a predator |
| **James B. Nardi, Rebecca Martos, Kimberly K.O. Walden, David J. Lampe, Hugh M. Robertson** | 883 | Expression of lacunin, a large multidomain extracellular matrix protein, accompanies morphogenesis of epithelial monolayers in *Manduca sexta* |
| **Jian-Hua Chen, Roy Powls, Huw H. Rees, Mark C. Wilkinson** | 899 | Purification of ecdysone oxidase and 3-dehydroecdysone 3α-reductase from the cotton leafworm, *Spodoptera littoralis* |
| **Zhikang Peng, Jian Yang, Hongsheng Wang, F. Estelle R. Simons** | 909 | Production and characterization of monoclonal antibodies to two new mosquito *Aedes aegypti* salivary proteins |
| **Alberto Martinez, David Scanlon, Barbara Gross, Srini C. Perara, Subba R. Palli, Andrew J. Greenland, John Windass, Olaf Pongs, Peter Broad, Ian Jepson** | 915 | Transcriptional activation of the cloned *Heliothis virescens* (Lepidoptera) ecdysone receptor (HvEcR) by MuristeroneA |
| **Martin Vögtli, Markus O. Imhof, Neil E. Brown, Peter Rauch, Margarethe Spindler-Barth, Markus Lezzi, Vincent C. Henrich** | 931 | Functional characterization of two *Ultraspiracle* forms (CtUSP-1 and CtUSP-2) from *Chironomus tentans* |
| **Yonggyun Kim, Esmail D. Davari, Veeresh Sevala, Kenneth G. Davey** | 943 | Functional binding of a vertebrate hormone, L-3,5,3′-triiodothyronine ($T_3$), on insect follicle cell membranes |
| **Forthcoming Papers** | 951 | |
| **Contents of *Journal of Insect Physiology*** | 953 | |

## NUMBER 11


| | | |
|---|---|---|
| **Luc Swevers, Kostas Iatrou** | 955 | The ecdysone agonist tebufenozide (RH-5992) blocks the progression into the ecdysteroid-induced regulatory cascade and arrests silkmoth oogenesis at mid-vitellogenesis |
| **Sophia Ekengren, Dan Hultmark** | 965 | *Drosophila* cecropin as an antifungal agent |
| **Jean-François Picimbon, Walter Soares Leal** | 973 | Olfactory soluble proteins of cockroaches |
| **Robert J. Lind, Martin S. Clough, Fergus G.P. Earley, Susan Wonnacott, Stuart E. Reynolds** | 979 | Characterisation of multiple $\alpha$-bungarotoxin binding sites in the aphid *Myzus persicae* (Hemiptera: Aphididae) |
| **Petr Kopáček, Ragnar Vogt, Libor Jindrák, Christoph Weise, Ivo Šafařík** | 989 | Purification and characterization of the lysozyme from the gut of the soft tick *Ornithodoros moubata* |
| **Helen Nichol, Michael Locke** | 999 | Secreted ferritin subunits are of two kinds in insects<br>Molecular cloning of cDNAs encoding two major subunits of secreted ferritin from *Calpodes ethlius* |
| **Robert Farkaš, Karel Sláma** | 1015 | Effect of bisacylhydrazine ecdysteroid mimics (RH-5849 and RH-5992) on chromosomal puffing, imaginal disc proliferation and pupariation in larvae of *Drosophila melanogaster* |
| **A.R. Nor Aliza, R.L. Rana, S.R. Skoda, D.R. Berkebile, David W. Stanley** | 1029 | Tissue polyunsaturated fatty acids and a digestive phospholipase A2 in the primary screwworm, *Cochliomyia hominivorax* |
| **Forthcoming Papers** | 1039 | |
| **Contents of *Journal of Insect Physiology*** | 1041 | |


## NUMBER 12


| | | |
|---|---|---|
| **Oliver Lung, Mariana F Wolfner** | 1043 | Drosophila seminal fluid proteins enter the circulatory system of the mated female fly by crossing the posterior vaginal wall |
| **Yu-Cheng Zhu, James E Baker** | 1053 | Characterization of midgut trypsin-like enzymes and three trypsinogen cDNAs from the lesser grain borer, Rhyzopertha dominica (Coleoptera: Bostrichidae) |
| **Midori Ono, Jeffrey J. Swanson, Linda M. Field, Alan L. Devonshire, Blair D. Siegfried** | 1065 | Amplification and methylation of an esterase gene associated with insecticide-resistance in greenbugs, Schizaphis graminum (Rondani) (Homoptera: Aphididae) |
| **Yang Wang, Haobo Jiang, Michael R. Kanost** | 1075 | Biological activity of Manduca sexta paralytic and plasmatocyte spreading peptide and primary structure of its hemolymph precursor |
| **Paola Varricchio, Patrizia Falabella, Rocco Sordetti, Franco Graziani, Carla Malva , Francesco Pennacchio** | 1087 | Cardiochiles nigriceps polydnavirus: molecular characterization and gene expression in parasitized Heliothis virescens larvae |
| **Sharon Keane, MF Ryan** | 1097 | Purification, characterisation, and inhibition by monoterpenes of acetylcholinesterase from the waxmoth, Galleria mellonella (L.) |
| **Ling Ling Niu, Ann Marie Fallon** | 1105 | The ribosomal protein L34 gene from the mosquito, *Aedes albopictus*: exon–intron organization, copy number, and potential regulatory elements |
| **Marlene Davey, Hanne Duve, Alan Thorpe, Peter East** | 1119 | Characterisation of the helicostatin peptide precursor gene from Helicoverpa armigera (Lepidoptera: Noctuidae) |
| **C Girard, Lise Jouanin** | 1129 | Molecular cloning of cDNAs encoding a range of digestive enzymes from a phytophagous beetle, Phaedon cochleariae |
| **Forthcoming Papers** | 1143 | |
| **Contents of *Journal of Insect Physiology*** | 1145 | |